

READINGS: Electronics Workbook 1 (ew1.pdf): Pages 66-76.
 Armstrong (armstrong.pdf): Chapters 7 - 9.

Assignment is due at the beginning of the next class, a one question quiz on this homework

Part 3A. Armstrong Questions

2.A1a) Armstrong “kept all grim details of his work from the family.”

What work and why grim?

3.A2b) Who said “Leave it on Major...I want to see if my name’s on it” when there was a report from the Missing Persons Bureau?

Part 3B. Scientific Notation, Electronic Abbreviations

3.B1. Give answers to the following mathematical equations using E notation

Examples: $10^2 \times 10^3 = ?$ Answer 10^5 or $100,000$ and $3 \times 10^2 \times 10^{-3} = ?$ Answer 3×10^{-1} or 0.3

3.B1a) $10^3 \times 10^4 =$

3.B1b) $10^4 \times 10^5 =$

3.B1c) $10^3 \times 10^{-4} =$

3.B1d) $10^7 \times 10^{-9} =$

3.B1e) $10^7 \div 10^9 = 10^7 / 10^9 =$

3.B2. Rewrite the given electronic quantities using the abbreviations: **K** (kilo) for E3 or **M** (mega) for E6 or **m** (milli) for E-3 or **μ** (Greek mu, micro) for E-6 as appropriate.

Abbreviate volts as **V**, amps as **A** and Farads as **F**.

Example : 10^3 ohms=? Answer: **1K ohms** or **1KΩ** or **1K**

3.B2a) $1.3 \times 10^{+6}$ ohms, using **M**

3.B2b) $470 \times 10^{+3}$ ohms, using **K**

3.B2c) 300×10^{-6} farads, using **μ**

3.B2d) 5.7×10^{-3} amps, using **m**

3.B2e) 1200 volts, using **K**

Part 3C. Diode Voltage Drops

3.C1. In this problem use the approximation that the voltage across a forward biased diode is approximately 0.6 volt. Assume all the diodes in this problem are forward biased.

Example: A **1K resistor** and a diode are connected in series to a **15 volt source**.

Find the current through the resistor.

Answer : $(15 - 0.6)\text{volts}/1\text{K} = 14.4 \text{ mA}$

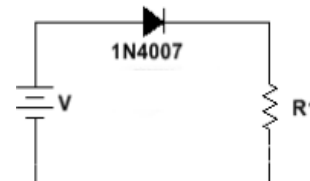


Figure 3.1 Series Diode-Resistor Circuit

Include sketches of the schematic diagrams for each part.

3.C1a) Repeat this problem with **2 diodes in series**

3.C1b) Repeat this problem with **3 diodes in series**

3.C1c) Repeat this problem with **4 diodes in series**